Defense Information Infrastructure (DII)

Common Operating Environment (COE)

Installation Procedures (IP)
for the
METCAST Server Segment (MCSRVR)
Release 3.1 Series

Revision A

4 May 1999

Prepared for:

Space and Naval Warfare Systems Command
Environmental Systems Program Office
(SPAWAR PMW-185)

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1   SCOPE

1.1   Identification

These Installation Procedures (IP) describe the installation of the METCAST Server Segment (MCSRVR) of the METCAST data distribution software, Release 3.1 Series, developed by Fleet Numerical Meteorology and Oceanography Center (FNMOC), Monterey, CA. This software is designed to run under the Defense Information Infrastructure (DII) Common Operating Environment (COE), release 3.1 or higher. The software runs under the following hardware and operating systems:

- Sun Enterprise 450 or higher computer running the Sun Solaris operating system, release 2.5.1 or higher.

- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210), or HP K570 or higher running the HP-UX operating system, release 10.20 or higher.

This document has been developed in accordance with the *DII COE Developer Documentation Requirements, Version 2.0.* Revision A addresses additional questions asked during the installation that were not covered in the original version of this document.

1.2   System Overview

METCAST is a standards-based, request-reply and subscription (channel) system for distributing weather information over the Internet using Hyper-Text Transfer Protocol (HTTP) and Multipurpose Internet Mail Extensions (MIME). The METCAST Server Segment is responsible for processing requests for data from METCAST Clients, interfacing with a database to attempt to satisfy each request, and formatting the retrieved data as specified in the request before returning the data to the client. The METCAST Client comprises a separate segment. METCAST Server also requires the METOC Channels Database (MDCHNL), METOC Observations Database (MDMETC), Grid Field Application Program Interface (API) (MAGRID), Grid Field Database (MDGRID), METOC Imagery API (MAIMG), METOC Imagery Database (MDIMG), Latitude-Longitude-Time (LLT) Observations API (MALLT), and LLT Observations Database (MDLLT) segments.

The full METCAST Server installation requires three segments: MDCHNL (the METOC Channels segment), MDMETC (the observation database segment) and MCSRVR (METCAST Server itself**). These segments must be installed in the following order:**

1. MDCHNL

2. MDMETC (**NOTE:** This segment requires a later version of the Informix On-Line Dynamic Server (INFXOL) segment than do MDCHNL and MCSRVR. If INFXOL **1.0.2.0**/Informix On-Line Dynamic Server **7.30** is not present on the system, this segment should not be installed. MCSRVR can still be installed, but will not have access to observations.)

3. MCSRVR (must be installed last, but requires MDMETC only if observations are to be processed).

2   REFERENCED DOCUMENTS

2.1   Government Documents

DDR-2 23 January 1998	*Defense Information Infrastructure (DII) Common Operating Environment (COE) Developer Documentation Requirements, Version 2.0,* Defense Information Systems Agency, Joint Operability and Engineering Organization
Unnumbered 15 June 1998	*Software Requirements Specification for METCAST,* Space and Naval Warfare Systems Command, Environmental Systems Program Office (SPAWAR PMW-185), San Diego, CA
fnmoc_METCAST_IP_11Series 23 April 1999	*Installation Procedures (IP) for the METCAST Client Segment, release 1.1 Series*
fnmoc_METCAST_UM_1100 23 April 1999	*User Manual (UM) for the METCAST Client Segment, release 1.1*
DII.COE31.HP10.20.CIP	*DII COE V3.1 HP 10.20 Consolidated Installation Procedures*
DII.3010.HP1020.KernelP1.IG-1	*DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP2.IG-1	*DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP3.IG-1	*DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide*
DII.3010.HP1020.KernelP4.IG-1	*DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide*
CM-400-185-03U 2 April 1997	*Consolidated Installation Guide, Solaris 2.5.1, Version 3.1*
CM-400-06U 2 April 1997	*Errata Sheets for Solaris 2.5.1 Version 3.1*
CM-400-77-03 7 April 1997	*DII COE Kernel v3.0.0.3 Installation Guide for Solaris 2.5.1*

CM-400-77-04
22 July 1997

DII COE Kernel v3.0.0.3 Kernel Patch 3 Installation Guide for Solaris 2.5.1

CM-400-77-06
31 July 1997

DII COE Kernel v3.0.0.3 Kernel Patch 4 Installation Guide for Solaris 2.5.1

CM-400-77-07

DII COE Kernel v3.0.0.3 Kernel Patch 5 Installation Guide for Solaris 2.5.1

CM-400-77-08
27 August 1997

DII COE Kernel v3.0.0.3P6 Kernel Patch 6 Installation Guide for Solaris 2.5.1

CM-400-77-12
01 December 1997

DII COE Kernel v3.0.0.3P8 Kernel Patch 8 Installation Guide for Solaris 2.5.1 (Applicable to Patch 9)

ipd4400magridipTES-10
29 January 1999

Installation Procedures (IP) for the Grid Field Application Program Interface (API) Segment (MAGRID) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

ipd4400mdgridipTES-10
29 January 1999

Installation Procedures (IP) for the Grid Field Database Segment (MDGRID) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

ipd4200malltipTES-10
9 October 1998

Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observations Application Program Interface (API) Segment (MALLT) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

ipd4300mdlltipTES-10
9 October 1999

Installation Procedures (IP) for the Latitude-Longitude-Time (LLT) Observations Database Segment (MDLLT) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

ipd4200maimgiptes-10
9 October 1998

Installation Procedures (IP) for the METOC Imagery Application Program Interface (API) Segment (MAIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

ipd4400mdgridipTES-10
9 October 1999

Installation Procedures (IP) for the METOC Imagery Database Segment (MDIMG) of the Tactical Environmental Support System (Next Century) [TESS(NC)] Meteorological and Oceanographic (METOC) Database

fnmoc_MDMETC_IP_11Series_RevA
4 May 1999

Installation Procedures (IP) for the METOC Observations Database (MDMETC) Segment, Release 1.1, Revision A

fnmoc_MDCHNL_IP_11Series_RevA
4 May 1999

Installation Procedures (IP) for the METOC Channels Database (MDCHNL) Segment, Release 1.1, Revision A

2.2 Non-Government Documents

None.

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3   SYSTEM ENVIRONMENT

3.1   System Requirements

3.1.1   Hardware Requirements

The METCAST Server segment is hosted on the following hardware:

- Sun Enterprise 450 or higher

- Tactical Advanced Computer, TAC-3 (HP 750/755)/TAC-4 (HP J210), or HP K570 or higher running the HP-UX operating system, release 10.20 or higher.

The following configurations are recommended:

- Sun Enterprise 450:   RAM: 128 MB minimum, 192 MB optimum
                         Disk Space: 200 GB

- TAC-3/TAC-4:   RAM: 128 MB minimum, 192 MB optimum
                         Disk Space: 200 GB
                         Swap Space: 300 MB

3.1.2   Operating System Requirements

- Sun: Solaris 2.5.1

- HP: HP-UX 10.20

3.1.3   Kernel Requirements

- Solaris 2.5.1:   Kernel 3.0.0.3 with patches through P9

- HP-UX 10.20 :   Kernel 3.0.1.0 with patches through P4

3.2   System and Site Preparations

3.2.1   System Configuration

The following software must be properly installed prior to loading the MCSRVR segment:

• Appropriate operating system (as described above)

• Appropriate DII COE Kernel (as described above)

• DII COE Informix On-Line Dynamic Server segment (INFXOL), version 1.0.1.1/7.23 or version 1.0.2.0/7.30

• DII COE DBAdm Account Group segment version 1.1.0.0

• DII COE DBAdmR segment version 1.1.0.2

• METOC Channels Database (MDCHNL) Segment (see Installation Procedures referenced in Section 2.1)

• METOC Observations Database (MDMETC) Segment (see Installation Procedures referenced in Section 2.1)

3.2.2   Operating System Preparation

Information needed to prepare the operating system is found in these documents:

HP-UX 10.20:

• DII COE V3.1 HP 10.20 Consolidated Installation Procedures

• DII COE Kernel 3.0.1.0P1 Patch 1 for HP-UX 10.20 Installation Guide

• DII COE Kernel 3.0.1.0P2 Patch 2 for HP-UX 10.20 Installation Guide

• DII COE Kernel 3.0.1.0P3 Patch 3 for HP-UX 10.20 Installation Guide

• DII COE Kernel 3.0.1.0P4 Patch 4 for HP-UX 10.20 Installation Guide

Solaris 2.5.1:

• DII COE Kernel v3.0.0.3 Installation Guide for Solaris 2.5.1

• DII COE Kernel v3.0.0.3 Kernel Patch 3 Installation Guide for Solaris 2.5.1

• DII COE Kernel v3.0.0.3 Kernel Patch 4 Installation Guide for Solaris 2.5.1

• DII COE Kernel v3.0.0.3 Kernel Patch 5 Installation Guide for Solaris 2.5.1

• DII COE Kernel v3.0.0.3P6 Kernel Patch 6 Installation Guide for Solaris 2.5.1

• DII COE Kernel v3.0.0.3P8 Kernel Patch 8 Installation Guide for Solaris 2.5.1 (Applicable to Patch 9)

3.2.3 Tape/Disk Preparation

The METCAST Server segment software is delivered on 4 mm DAT cartridge for the Sun and HP hardware environments.

3.2.4 Operator Qualifications

The installation process requires that the operator be able to log in to the system as root, as System Administrator (sysadmin), and as Database Administrator (dbadmin).

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4   INSTALLATION INSTRUCTIONS

Installation on HP-UX and Solaris systems is performed using the DII COE Segment Installer.

4.1   Media Booting Procedures

To prepare a tape for installation:

1. Insert the tape in the DAT drive.

2. Log in as sysadmin.

3. Configure the web server before starting the installation:

    a. Open an xterm (see Section 5.2).

    b. At the command prompt, type

        ```
        su root <Enter>
        ```

        where <Enter> represents the Enter or Return key. Then enter the root password at the prompt, and press the Enter key again.

    c. At the command prompt, type

        ```
        cd /h/data/local/APACHE/conf <Enter>
        ```

    d. Edit the *access.conf* file in this directory using the text editor or vi.

    e. Make sure that the following section is present in its entirety:

        ```
        <Directory /h/data/local/APACHE/cgi-bin>
        AllowOverride Limit AuthConfig
        Options FollowSynLinks
        </Directory>
        ```

        If this section is not present and as shown, add or modify it. Save and close the modified file.

    f. If the file needed modification, open the **Network** menu, select **Servers**, then **APACHE Web Server**, then **Shutdown Web Server**.

    g. In the **Network** menu, select **Servers**, then **APACHE Web Server**, then **Start Web Server**.

    h. Close the xterm.

4. Select the System Administration SEGMENT INSTALLER utility under the **Software** pull-down menu.

5. Select the source and click the **Read Contents** button. The contents of the tape appear in the SELECT SOFTWARE TO INSTALL portion of the SEGMENT INSTALLER window.

4.2   Installation Procedures

(Note: Prior to segment installation, ensure that no existing METCAST Server segment is installed on the target platform. If there is a **METCAST Server** segment listed in the CURRENTLY INSTALLED SEGMENTS section of the window, select it, then select the **Deinstall** button and follow the instructions on the screen to remove the existing METCAST Server segment.)

To install the METCAST Server software:

1. First ensure that the operating system (OS) and Kernel, with all patches, are installed. Instructions for installing the OS, Kernel, and patches are contained in the documentation cited in Section 3.2.2.

2. Install the METCAST Server segment from the installation tape.

    •   Highlight **METCAST Server**.

    •   Click the **Install** button.

3. The INSTALL STATUS dialog box will appear, which will give software loading status in a % format.

4. Answer n <Enter> to all prompts in the Update Security Database window which pops up toward the end of the installation.

5. Once the installation is complete, the SEGMENT INSTALLER window will appear. The **METCAST Server** will be displayed in the CURRENTLY INSTALLED SEGMENTS section of the window.

6. After exiting the installer, proceed to the instructions in Section 4.5 for initialization of the software.

4.3   Installation of Upgrades

Installation of upgrades will generally follow the same procedures listed above.

4.4   Installation Verification

All successfully installed segments are listed in the CURRENTLY INSTALLED SEGMENTS portion of the INSTALLER window on HP-UX and Solaris systems

4.5   Initializing the Software

After installing the MCSRVR segment, the following steps need to be performed to start the METCAST Server:

1. Reboot the computer. To do this, click on **Hardware** on the menu bar, then select **Reboot System** from the menu that drops down. If a confirmation dialog appears, confirm that you want to reboot.

2. Log in as dbadmin.

3. Ensure that the Informix server is running. Click on **Database Control** on the menu bar, then select **Server Control** from the drop-down menu. If the dialog that appears says Informix server is DOWN, click on the Start Server button. This should start the Informix server, and the dialog should say the server is UP. When the server is up, close the dialog.

4. Log out and log in as sysadmin.

5. Open the **Network** menu, then the **Servers** submenu, then the **Metcast Server** submenu below that. This submenu contains the following items:

    *   **Start Grid Ingest** starts the decoders and database ingest processes for grids.

    *   **Purge Grid Database** purges the grid database of old data. This is a convenience to force an immediate purge of the database -- the script will run automatically each hour without user intervention. By default, it purges all grid data with a base time over 36 hours old. The retention time can be modified by editing the file */h/MCSRVR/Scripts/Prune-grid*.

    *   **Start Image Ingest** starts the decoders and database ingest processes for images.

    *   **Purge Image Database** purges the grid database of old data. This is a convenience to force an immediate purge of the database -- the script will run automatically each hour without user intervention. By default, it purges all images with a base time over 24 hours old. The retention time can be modified by editing the file */h/MCSRVR/Scripts/MCSRVRImagePurgeS*.

    *   **Start Obs Ingest** (available only if the MDMETC segment is installed) starts the decoders and database ingest processes for observations.

    *   **Stop All Decoders** stops all decoders and ingest processes.

    *   **Start All Decoders** starts the decoders and ingest processes for grids, images, and observations. It is equivalent to selecting **Start Grid Ingest**, **Start Image Ingest**, and **Start Obs Ingest.**

- **Publish Dynamic Product List** immediately publishes the dynamic product list for the server. Ordinarily the dynamic product list is published hourly, starting one hour after installation. This option allows the user to publish it on demand.

- **Test Decoders** launches all installed decoders and copies data files to the appropriate directories from which they should be ingested into the database.

6. Click on the **Test Decoders** item in the menu. This launches the decoders and feeds them data files that should be ingested into the database (the files are copied into the /h/data/local/MCSRVR/data directory in the grids, images, and OBSV subdirectories as appropriate).

7. Check the results of the test. Open an xterm (see Section 5.2). Use the following commands to examine the ingest logs (NOTE: These commands use `more` to page through the files. To advance a page, use the space bar. To exit when done, use the "q" key.):

    `cd /h/data/local/MCSRVR/log <Enter>` (NOTE: In this and other command lines, <Enter> means the Enter or Return key.)

    `more gribIng.log <Enter>`   This is the ingest log for grids. If the decoder worked properly, you should see several lines starting with Ingested…. Exit more with the "q" key when done examining the log.

    `more MCSRVR_IMAGE_LOG <Enter>` This is the ingest log for images. If the decoder worked properly, you should see several lines starting with Insert of…. Exit more with the "q" key when done examining the log.

    If the MDMETC segment was installed, type `more observation.log <Enter>` This opens the log for observations. Again, look for lines starting with Ingested…. Exit more with the "q" key when done examining the log.

    Close the xterm when you are finished examining the logs.

8. Using the menus, publish the Dynamic Data List.

4.6   List of Changes and Enhancements

This section is tailored out. This is an initial installation of the METCAST Server segment.

4.7   Important Considerations

This section is tailored out.

5 NOTES

5.1 Glossary of Acronyms

COE   Common Operating Environment

DII   Defense Information Infrastructure

FNMOC   Fleet Numerical Meteorology and Oceanography Center

GUI   Graphical User Interface

HTTP   Hyper-Text Transfer Protocol

INFXOL   Informix On-Line Dynamic Server Segment

IP   Installation Procedure

IP   Internet Protocol

MCSRVR   METCAST Server Segment

MDCHNL   METOC Channels Segment

MDMETC   METOC Observations Database Segment

METCAST   METOC Broadcast

METOC   Meteorological and Oceanographic

MIME   Multipurpose Internet Mail Extensions

PC   Personal Computer

SRS   Software Requirements Specification

SVD   Software Version Description

T&E   Test and Evaluation

TCP   Transport Control Protocol

UM   User Manual

5.2   Starting an xterm

Several parts of the installation procedures require the operator to start an xterm and enter commands. To open an xterm:

1. Log in as sysadmin.

2. Go to the tool bar at the bottom of the screen and double-click on the file drawer (File Manager) icon to open the File Manager.

3. Double-click on the DII_APPS folder to open it.

4. Double-click on the SA_Default folder to open it.

5. Double-click on the XTerm icon to open the xterm.

6. You can now log in on the xterm.